

Several Undescribed Mymarid Egg-Parasites of the Genus *Anagrus* Haliday

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It is interesting to present here the descriptions of two new species of minute egg-parasites of the genus *Anagrus*. This genus is in such a state of confusion that the identity of a number of species must be cleared up before certain material can be definitely placed. Most of the species can be easily separated by distinctive coloration in life but, unfortunately, this fades when the specimens are mounted in balsam on slides for preservation.

Anagrus insularis new species.

Anagrus insularis is very close in general appearance to **Anagrus subfuscus* Förster, a European egg-parasite of damselflies, but is distinctly smaller and a shade lighter in coloration. It appears to be undoubtedly an endemic species.

Female. Length, including ovipositor, 0.434 mm.; expanse 1.05 mm.; greatest width of forewing 0.049 mm. General coloration a distinct brown, even the wings being tinged with light brown. Legs and antennae brown, the pedicel and first funicle joint slightly lighter.

Head a little broader than the thorax, the ocelli forming a small triangle. Antennae nine-jointed, comparatively stout, with the club prominent; scape about twice as long as the pedicel and distinctly widened along the middle; pedicel stout, about as wide as the scape but shorter, its length being slightly less than twice its width; funicle 1 very short and narrow; funicle 2 slightly longer than 3 and the other funicle joints, and distinctly the narrowest; the remaining funicles enlarging successively; club about two and a half times as long as the preceding funicle joint. Forewings narrow, longer than the body, broadening towards the apex; widest just before the rounded apex; marginal hairs very long, the longest at the lower apical end being over twice the greatest wing width; the discal cilia sparsely arranged in irregular lines, cover practically the entire area and do not leave a

* *Anagrus subfuscus* Förster appears to be a true aquatic species as it was reared from the eggs of *Calopteryx virgo* L. in leaves of *Nymphaea alba* and *Nuphar luteum* in Europe. It is a dark brown species, measuring 0.6-0.8 mm.

distinct bare or naked space, characteristic of certain species. Hind wings long and narrow, petiolate at base. Abdomen about equal in length to that of both the head and thorax, the ovipositor distinctly but slightly exserted. Legs long and slender, tarsi 4-jointed.

Male. Length 0.392 mm. Similar to the female in color, differentiated immediately by the long, narrow 13-jointed antennae. Funicle 1 subequal the pedicel in length but distinctly narrower; funicle 2 slightly longer than the remaining funicle joints which are subequal in length and width except the last which is shorter and tapered to a point.

Described from a series of sixty-one females and two males mounted in balsam on four slides, reared from eggs in *Ipomoea bona-nox* leaf, Haleauau, Oahu, Hawaii, Sept. 14, 1930; and nine females, mounted on two slides, reared from eggs of *Agrion*, a native damselfly, in leaf of *Commelina nudiflora* in Hering Valley, Tantalus, Oahu, August 1933, by F. X. Williams.

Anagrus frequens Perkins.

Numerous females reared by O. H. Swezey from eggs of *Peregrinus maidis* on corn at Honolulu, Hawaii, Oct. 4, 1932.

Anagrus sp.

Both sexes of a species of *Anagrus* reared in abundance from eggs of *Empoasca solana* DeLong in foliage of *Amaranthus spinosus* at Honolulu, Hawaii, June 28, 1930, by O. H. Swezey. This species appears to be closest to *A. giraulti* Crawford but a number of species must be cleared up before naming this species. It has been compared with *Anagrus nigriventris* Girault, *A. empoascae* Dozier, *A. frequens* Perkins, *A. cpos* Girault, and *A. columbi* Perkins and proves very distinct from those species.

Anagrus columbi Perkins.

This species was originally described by Perkins in 1905 in Hawaii from material bred from eggs of *Liburnia* sp. on grass at Columbus, Ohio (Koebele No. 2320). It was synonymized by Girault from description only with *armatus* but appears to be a distinct and valid species. Specimens of both sexes collected by the writer sweeping grass in pasture meadow at Hillvale, Pa., August 1, 1933, were rather robust for the genus and of a distinct dull rusty red color in life, thereby differing greatly from typical

armatus. When mounted in balsam on slides, all trace of red fades, leaving the insects with an almost entirely light brown appearance; the scape, pedicel and first funicle are pale, the club and remaining funicle joints distinctly fuscous; the legs light grayish brown.

Erythmelus noeli (Dozier).

This interesting species was described by the writer under the name of *Anagrus noeli* (Jr. Dept. Agr. of Puerto Rico, xvi, no. 2, April 1932, pp. 87-88) from Haiti but upon further study proves to better fit in the genus *Erythmelus*.

Anagrus delicatus new species.

A very distinct species, easily distinguished from all other North American species by its light brownish color, greatly exerted ovipositor, long antennae, and the arrangement of discal ciliation of the forewings.

Female. Length, including ovipositor, 0.728 mm.; expanse 1.064 mm.; greatest width of forewing 0.053 mm. General coloration a light brown, the body slightly paler along the venter. Antennae dusky, the scape, pedicel, and first funicle joint pale. Legs dusky.

Antennae very long and slender; scape over twice as long as the pedicel, distinctly widened along the middle, with faint transverse lines visible under high power of microscope; pedicel stout, subequal in width to that of the scape but only about half as long; funicle 1 very short, only half as long as the pedicel; funicle 2 very narrow at proximal end, slightly wider at distal end, distinctly the longest joint, being nearly six times as long as greatest width, nearly a fifth longer than funicle 3; funicles 4, 5 and 6 subequal in length and widening successively very gradually; club elongate-oval, three times as long as wide, about twice as long as the last funicle joint. Forewings very long and narrow, widening towards the apex; marginal hairs very long, the longest at the lower apical end being over twice as long as the greatest width of wing; discal ciliation sparse, arranged in a single median line extending from the stigmal vein to near the tip of the wing where the cilia compose three irregular ill-defined rows in the widest area. Abdomen longer than the thorax; ovipositor greatly exerted, extending beyond the tip at least half the length of the abdomen. Legs long and slender, the tarsi 4-jointed.

Male. Length 0.462 mm. Similar to the female but distinguished immediately by the 13-jointed, long and narrow antennae. Antennal joints dusky except the pale pedicel; funicle 1 slightly longer than the pedicel but only about two-thirds as wide; funicle 2 very slightly the longest joint, the others subequal in length and width.

Described from a single holotype female and allotype male swept by the writer from low moist vegetation in bed of creek near Elizabethtown, Illinois, August 5, 1932. This species will probably prove to be an egg-parasite of some aquatic insect when its biology becomes known.